

**Patent claims**

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1. Gasket having at least one metallic layer in which at least one gasket opening and at least one bead are formed, and in and/or adjacent to the bead a coating is applied as a deformation limiter, which comprises at least one filler and one bonding agent,  
**characterised in that**
- 10 the mass proportion of the filler is greater than the proportion of bonding agent and the filler is present in particle form, the individual spherical particles having a small surface in relation to the volume of the particle.
- 15 2. Gasket according to claim 1, **characterised in that** the particles have a smoothed, rounded surface.
3. Gasket according to claim 1 or 2, **characterised in that** the particles are spherical.
- 20 4. Gasket according to one of claims 1 to 3, **characterised in that** at least 80% of the particles have an average grain size in the range between 5 and 100  $\mu\text{m}$ .
- 25 5. Gasket according to one of claims 1 to 4, **characterised in that** the particles consist of a metal, an alloy, resin or ceramics or mixtures thereof.
6. Gasket according to claim 5, **characterised in that** the filler consists of a copper/tin alloy.
- 30 7. Gasket according to one of claims 1 to 6, **characterised in that** a mass ratio of filler to bonding agent of at least 2:1 is maintained.

8. Gasket according to one of claims 1 to 7, **characterised in that** the filler is contained in the coating (2) with a mass proportion  $\geq 90\%$ .
- 5 9. Gasket according to one of claims 1 to 8, **characterised in that** the bonding agent is a thermosetting material.
- 10 10. Gasket according to claim 9, **characterised in that** the thermosetting material is selected from epoxy resin, silicon resin and polyamide resin.
- 10 11. Gasket according to claim 9, **characterised in that** the thermosetting plastic is an epoxy resin based on bisphenol A.
- 15 12. Gasket according to one of claims 1 to 11, **characterised in that** at least one thermoplastic addition is also contained.
13. Gasket according to claim 12, **characterised in that** the addition(s) is(are) selected from PTFE, PE, PP and PA.
- 20 14. Gasket according to one of claims 1 to 13, **characterised in that** the coating (2) is applied in lines.
- 25 15. Gasket according to one of claims 1 to 14, **characterised in that** the coating (2) is applied in the form of a line of differing width and/or height and/or shape.
16. Gasket according to one of claims 1 to 15, **characterised in that** the coating (2) is applied to two facing sides of a metallic layer (1).

17. Gasket according to one of claims 1 to 16, **characterised in that** the coating (2) is applied on a metallic layer (4) in the region of a bead (3) of a second metallic layer (1).
- 5 18. Gasket according to one of claims 1 to 17, **characterised in that** the coating (2) is applied on two facing sides of a bead (3).
- 10 19. Gasket according to at least one of claims 1 to 18, **characterised in that** the coating (2) is arranged in a bead (3).
- 15 20. Gasket according to one of claims 1 to 19, **characterised in that** the surface of the coating (2) comprises substantially the bonding agent and/or a thermoplastic addition, or is provided with an additional sealing layer.
- 20 21. Method of manufacturing a gasket having at least one metallic layer, in which at least one gasket opening and at least one bead are formed, and in and/or adjacent to the bead a coating is applied as a deformation limiter, **characterised in that**
- 25 a mixture containing at least one filler and one bonding agent is applied to a metallic layer (1, 4), the mass proportion of filler being greater than the proportion of bonding agent, and a filler in particle form is used, the individual particles of which have a small surface in relation to the volume of the particle; and the applied coating
- 30 (2) is hardened.
22. Method according to claim 21, **characterised in that** the mixture is hardened by energy input.

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23. Method according to claim 21 or 22, **characterised in that** a mixing ratio of filler to bonding agent is set with a mass proportion of at least 2:1.
- 5 24. Method according to one of claims 21 to 23, **characterised in that** at least one thermoplastic addition is also added to the mixture.
25. Method according to one of claims 21 to 24, **characterised in that** the mixture is printed onto the metallic layer (1, 4).
- 10 26. Method according to one of claims 21 to 25, **characterised in that** the mixture is hardened by means of heat treatment.

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